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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/289,600      | 04/12/1999  | AKIRA YAMAGUCHI      | Q53967              | 8833             |

7590 02/27/2003

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WASHINGTON, DC 200383202

EXAMINER

LESPERANCE, JEAN E

ART UNIT

PAPER NUMBER

2674

DATE MAILED: 02/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                               |                  |
|------------------------------|-------------------------------|------------------|
| <b>Office Action Summary</b> | Application No.               | Applicant(s)     |
|                              | 09/289,600                    | YAMAGUCHI ET AL. |
|                              | Examiner<br>Jean E Lesperance | Art Unit<br>2674 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 18 November 2002.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-34 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 12 April 1999 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

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## **DETAILED ACTION**

1. Claims 1-34 are presented for examination.

### ***Claim Rejections - 35 U.S.C. § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-34 are rejected under 35 U.S.C. 103 (a) as being unpatentable over patent # 5,872,554 (“Chang et al.”) in view of patent # 6,091,396 (“Minami et al.”).

As for claims 1 and 5-31 Chang et al. teach the grayscale image is divided into a sequence of pages of image data each having an array of dots equal to the resolution of the grayscale image such that each pixel on the grayscale image corresponds to a sequence of dots respectively on the corresponding location on the N-1 pages of image data (abstract) corresponding to a display device comprising a plurality of picture elements, each picture element comprising a series of cells, each cell expressing tones in multiple levels; the FR and FP signals are used for screen display synchronization , the LP signal for row synchronization that generates a pulse at the start of the scanning of each row, and the SCP signal for shift clock synchronization that provides a series pulses for the synchronization of the display of each (page Fig. 5) (column 5, lines 36-42);

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wherein each cell of said series of cells emits light in the same color(Fig.1), wherein the output luminance of the plurality of picture elements express said monochromatic image (column 2, lines 34-55). Accordingly, Chang et al. teach all the claimed limitations as recited in claims 1, and 5-31with exception of providing the output luminance of the cell, the flat panel, and the CIE chromaticity diagram.

However, Minami et al. teach a PDP Fig. 1 (7) corresponding to a flat panel display system, the plurality of sub-fields having a high relative ratio of luminescent time are arranged in a time sequence in a descending or ascending order (abstract) corresponding to the output luminance of the cells. And the CIE chromaticity diagram is a standard diagram that is well known in the art and the range of maximum luminance is the standard they use in the military and is also well known in the art.

It would have been obvious to the PDP, the output luminance of the cells as taught by Minami et al. in the non-blinking displaying system disclosed by Chang et al. because this would allow the provision of a gradation display while reducing a dynamic false contour.

As for claim 2, Chang et al. teach a pixel on the original image has a gray level 0 (black), the corresponding dots (sub-pixels) on the three pages are all black (same color) (column 1, lines 50-52) corresponding to the cells are substantially uniform.

As for claims 3-4, Chang et al. teach each pixel on the grayscale image corresponds to a sequence of dots respectively on the corresponding location on the N-1 pages of image data (abstract) corresponding to the picture element corresponding to the cells.

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As for claim 32-34, Chang et al. teach a monochrome LCD screen that is used to simulate a 4-level grayscale display. If a pixel on the original image has a gray level 0 (black), the corresponding dots (sub-pixels) on the three pages are all black (same color) (column 1, lines 38-52).

***Response to Amendment***

3. Applicant's arguments filed on 11-18-2002 have been fully considered but they are not persuasive. The applicant argued that the prior art does not teach "each pixel comprising adjacent cells". Examiner disagrees because Chang et al. teach a monochrome LCD screen that is used to simulate a 4-level grayscale display. For example, (Fig.2) includes page 1, dark gray has 9 cells adjacent to each other in that one pixel and of course they are spatially adjacent. Furthermore, applicant argued that the prior art does not teach the series of cells of a respective picture element which express tones of multiple levels are spatially adjacent. Again examiner disagrees because by looking again at Fig.2 page 1 dark gray where the pixel has 9 cells adjacent to each other and has tone of multiple levels. Therefore the rejection stands as was rejected in the previous office action.

**Conclusion**

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean Lesperance whose telephone number is (703) 308-6413. The examiner can normally be reached on from Monday to Friday between 8:00AM and 4:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (703) 305-4709 .

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal drive, Arlington, VA, Sixth Floor (Receptionist).

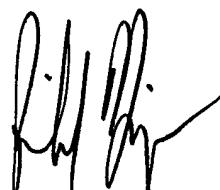
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Jean Lesperance



Date 2-12-2003

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RICHARD HJERPE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600